

# SOIL TEST REPORT

ROBERT E WILSON  
2338 CHARLIE DOTY ROAD  
GREENEVILLE, TN 37745

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Soil, Plant and Pest Center  
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Date Tested: 6/29/2011

County: Greene

Lab Number: 418108

## Mehlich 1 SOIL TEST RESULTS and RATINGS

Sample ID PLOT02

(Pounds Per Acre)

Water pH	Buffer Value	P Phosphorus	K Potassium	Ca Calcium	Mg Magnesium	Zn Zinc	Cu Copper	Fe Iron	Mn Manganese	B Boron	Na Sodium	S Sulfur	Nitrates (ppm)
6.1		99 H	63 L	2105 S	274 S								
		Organic Matter %	Soluble Salts PPM**										

## RECOMMENDATIONS

PLOT02

Fertilizer/Lime Application Rate and Timing

### Grass or Grass/Legume Hay

N / P<sub>2</sub>O<sub>5</sub> / K<sub>2</sub>O

Nitrogen/Phosphate/Potash: 30-165 / 0 / 60-90 pounds per acre

Limestone: Lime is not recommended at this time

Apply recommended amounts of phosphate and potash (higher rates of P<sub>2</sub>O<sub>5</sub> and K<sub>2</sub>O for seeding) in one application anytime during the year. Apply 60 pounds of nitrogen per acre March 1-30 (30 lbs. if > 30% legumes are present). Where a second cutting is expected, apply an additional 45 pounds of N per acre immediately after the first cutting. Stockpiling fescue in the fall 60 pounds of N per acre is suggested August 15 to September 15 if moisture is available. If renovating with legumes, nitrogen should be omitted.

If urea is the nitrogen source, especially for fall topdressings, some loss of nitrogen may occur if applied to moist soils followed by three or more days of rapidly drying conditions without rainfall. If more than 4 tons of lime per acre is required, apply only 4 tons of lime per acre and re-test after one year.

County: Greene

Lab Number: 418109

## Mehlich 1 SOIL TEST RESULTS and RATINGS

Sample ID PLOT03

(Pounds Per Acre)

Water pH	Buffer Value	P Phosphorus	K Potassium	Ca Calcium	Mg Magnesium	Zn Zinc	Cu Copper	Fe Iron	Mn Manganese	B Boron	Na Sodium	S Sulfur	Nitrates (ppm)
5.9	7.6	94 H	465 V	1685 S	306 S								
		Organic Matter %	Soluble Salts PPM**										

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# Explanation of Soil Test Report

Recommendations in this report are based upon research data collected under various soil conditions and cropping systems throughout the state by University of Tennessee Research and Education Centers and Extension personnel.

## Soil Test Ratings and Results

### Phosphorus (P) and Potassium (K)

**LOW (L)** - In most cases, plants will respond to the application of that nutrient. If the nutrient is not applied, deficiency symptoms may occur and crops usually yield less than 75 percent of their potential.

**MEDIUM (M)** - Plants may or may not respond to the application of the nutrient. Deficiency symptoms are not likely and soils can be expected to produce 75 percent or more of their potential without application of the nutrient.

**HIGH (H)** - The soil will produce at or near 100 percent of its potential without the addition of the nutrient. Amounts recommended are primarily to maintain present soil test levels.

**VERY HIGH (V)** - Supply of the nutrient in the soil is well in excess of the amount needed to produce 100 percent of the soil's potential. Application of the nutrient is not recommended, since further additions may create nutrient imbalances.

### Soil Test Ratings and Pounds per Acre - Phosphorus (P) and Potassium (K)

Rating	Phosphorus (P)	Potassium (K)
LOW (L)	0 - 18	0 - 90
MEDIUM (M)	19 - 30	91 - 160
HIGH (H)	31 - 120	161 - 320
VERY HIGH (V)	121+	321+

### Secondary and Micronutrients

**SUFFICIENT (S)** - Indicates an adequate supply of the nutrient is available in the soil and a plant response to its use would not normally be expected.

**DEFICIENT (D)** - Indicates an inadequate supply of the nutrient is in the soil and application of the nutrient is recommended.

### Soluble Salts

The soluble salts test refers to the potential for harmful effects due to the concentration of salts present in the soil. Soluble salt levels should be in the very low to medium range. Higher levels may indicate over-fertilization or a poor drainage situation which allows accumulation.

### General Soluble Salt Ratings and Interpretations

ppm*	Rating	Interpretations
0 - 360	Very Low	Salt effects mostly negligible.
361 - 1060	Low	Field crops mostly unaffected.
1061 - 1760	Medium	Favorable range for most established plants.
2461 - 3160	High	Reduced yields and growth of many plants.
3161 +	Very High	Severe salt injury and death may occur.

\*ppm - parts per million total salt in the air-dried sample

### Organic Matter

Organic matter is estimated from total carbon determined by Carlo Erba.

### Details of your soil test report

**Water pH** - Actual soil pH ("Water" refers to the method of measuring pH). Most plants grow best at a slightly acidic range of 6.1 to 6.5 where nutrients are most available.

**Buffer Value** - An additional procedure we do where lime might be required. It helps to formulate a lime rate of application based on the buffering capacity of your soil.

**Nutrient Results** - See explanations above.

**Nitrogen/Phosphate/Potash** - Where fertilizer recommendations are given in *actual pounds of nutrient per acre* expressed as N, P<sub>2</sub>O<sub>5</sub> and K<sub>2</sub>O. Those crops grown in smaller areas will be provided recommendations in square footage noted in text below lime recommendation(s).

**Limestone** - If lime is recommended, water pH is too low for optimal plant growth. Crop/plant response to lime varies with both crop and variety.

*For plants with the recommended target pH range of 6.1 to 6.5: At pH 6.0 - 5.8, chances are low for a response to lime. At pH 5.6 - 5.7, chances are medium for a response to lime. At pH < 5.6, chances become high for a response to lime therefore liming is strongly encouraged to increase soil pH levels and prevent yield loss.* You may lime any time of the year, however fall applications are best. Types of lime recommended are ground agricultural limestone or pelleted lime.

**Text Notes** - Contains crucial information concerning fertilizer recommendations and specific instructions on types, rate of application and dates when applications should be applied.

Programs in agriculture and natural resources, 4-H youth development, family and consumer sciences, and resource development.

University of Tennessee Institute of Agriculture, U.S. Department of Agriculture and county governments cooperating.

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Sample ID PLOT02

(Pounds Per Acre)

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PLOT02

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Grass or Grass/Legume Hay

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County: Greene

Lab Number: 418109

## Mehlich 1 SOIL TEST RESULTS and RATINGS

Sample ID PLOT03

(Pounds Per Acre)

Water pH	Buffer Value	P Phosphorus	K Potassium	Ca Calcium	Mg Magnesium	Zn Zinc	Cu Copper	Fe Iron	Mn Manganese	B Boron	Na Sodium	S Sulfur	Nitrates (ppm)
5.9	7.6	94 H	465 V	1685 S	306 S								
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County: Greene

Lab Number: 418109

## Mehlich 1 SOIL TEST RESULTS and RATINGS

Sample ID PLOT03

(Pounds Per Acre)

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## RECOMMENDATIONS

PLOT03

Fertilizer/Lime Application Rate and Timing

### Grass or Grass/Legume Hay

N / P<sub>2</sub>O<sub>5</sub> / K<sub>2</sub>O

Nitrogen/Phosphate/Potash: 30-165 / 0 / 0 pounds per acre

Limestone: 2 tons per acre

Apply recommended amounts of phosphate and potash (higher rates of P<sub>2</sub>O<sub>5</sub> and K<sub>2</sub>O for seeding) in one application anytime during the year. Apply 60 pounds of nitrogen per acre March 1-30 (30 lbs. if > 30% legumes are present). Where a second cutting is expected, apply an additional 45 pounds of N per acre immediately after the first cutting. Stockpiling fescue in the fall 60 pounds of N per acre is suggested August 15 to September 15 if moisture is available. If renovating with legumes, nitrogen should be omitted.

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County: Greene

Lab Number: 418110

## Mehlich 1 SOIL TEST RESULTS and RATINGS

Sample ID PLOT04

(Pounds Per Acre)

Water pH	Buffer Value	P Phosphorus	K Potassium	Ca Calcium	Mg Magnesium	Zn Zinc	Cu Copper	Fe Iron	Mn Manganese	B Boron	Na Sodium	S Sulfur	Nitrates (ppm)
6.0	7.5	63 H	147 M	3099 S	311 S								
		Organic Matter %	Soluble Salts PPM**										

## RECOMMENDATIONS

PLOT04

Fertilizer/Lime Application Rate and Timing

### Grass or Grass/Legume Hay

N / P<sub>2</sub>O<sub>5</sub> / K<sub>2</sub>O

Nitrogen/Phosphate/Potash: 30-165 / 0 / 30-60 pounds per acre

Limestone: 2 tons per acre

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County: Greene

Lab Number: 418111

## Mehlich 1 SOIL TEST RESULTS and RATINGS

Sample ID PLOT05

(Pounds Per Acre)

Water pH	Buffer Value	P Phosphorus	K Potassium	Ca Calcium	Mg Magnesium	Zn Zinc	Cu Copper	Fe Iron	Mn Manganese	B Boron	Na Sodium	S Sulfur	Nitrates (ppm)
5.5	7.6	89 H	142 M	1627 S	207 S								

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### Soil Test Ratings and Results

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(Pounds Per Acre)

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(Pounds Per Acre)

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### Soil Test Ratings and Results

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**LOW (L)** - In most cases, plants will respond to the application of that nutrient. If the nutrient is not applied, deficiency symptoms may occur and crops usually yield less than 75 percent of their potential.

**MEDIUM (M)** - Plants may or may not respond to the application of the nutrient. Deficiency symptoms are not likely and soils can be expected to produce 75 percent or more of their potential without application of the nutrient.

**HIGH (H)** - The soil will produce at or near 100 percent of its potential without the addition of the nutrient. Amounts recommended are primarily to maintain present soil test levels.

**VERY HIGH (V)** - Supply of the nutrient in the soil is well in excess of the amount needed to produce 100 percent of the soil's potential. Application of the nutrient is not recommended, since further additions may create nutrient imbalances.

#### Soil Test Ratings and Pounds per Acre - Phosphorus (P) and Potassium (K)

Rating	Phosphorus (P)	Potassium (K)
LOW (L)	0 - 18	0 - 90
MEDIUM (M)	19 - 30	91 - 160
HIGH (H)	31 - 120	161 - 320
VERY HIGH (V)	121+	321+

#### Secondary and Micronutrients

**SUFFICIENT (S)** - Indicates an adequate supply of the nutrient is available in the soil and a plant response to its use would not normally be expected.

**DEFICIENT (D)** - Indicates an inadequate supply of the nutrient is in the soil and application of the nutrient is recommended.

#### Soluble Salts

The soluble salts test refers to the potential for harmful effects due to the concentration of salts present in the soil. Soluble salt levels should be in the very low to medium range. Higher levels may indicate over-fertilization or a poor drainage situation which allows accumulation.

#### General Soluble Salt Ratings and Interpretations

ppm*	Rating	Interpretations
0 - 360	Very Low	Salt effects mostly negligible.
361 - 1060	Low	Field crops mostly unaffected.
1061 - 1760	Medium	Favorable range for most established plants.
2461 - 3160	High	Reduced yields and growth of many plants.
3161 +	Very High	Severe salt injury and death may occur.

\*ppm - parts per million total salt in the air-dried sample

#### Organic Matter

Organic matter is estimated from total carbon determined by Carlo Erba.

### Details of your soil test report

**Water pH** - Actual soil pH ("Water" refers to the method of measuring pH). Most plants grow best at a slightly acidic range of 6.1 to 6.5 where nutrients are most available.

**Buffer Value** - An additional procedure we do where lime might be required. It helps to formulate a lime rate of application based on the buffering capacity of your soil.

**Nutrient Results** - See explanations above.

**Nitrogen/Phosphate/Potash** - Where fertilizer recommendations are given in *actual pounds of nutrient per acre* expressed as N, P<sub>2</sub>O<sub>5</sub> and K<sub>2</sub>O. Those crops grown in smaller areas will be provided recommendations in square footage noted in text below lime recommendation(s).

**Limestone** - If lime is recommended, water pH is too low for optimal plant growth. Crop/plant response to lime varies with both crop and variety.

*For plants with the recommended target pH range of 6.1 to 6.5: At pH 6.0 - 5.8, chances are low for a response to lime. At pH 5.6 - 5.7, chances are medium for a response to lime. At pH < 5.6, chances become high for a response to lime therefore liming is strongly encouraged to increase soil pH levels and prevent yield loss.* You may lime any time of the year, however fall applications are best. Types of lime recommended are ground agricultural limestone or pelleted lime.

**Text Notes** - Contains crucial information concerning fertilizer recommendations and specific instructions on types, rate of application and dates when applications should be applied.

Programs in agriculture and natural resources, 4-H youth development, family and consumer sciences, and resource development.

University of Tennessee Institute of Agriculture, U.S. Department of Agriculture and county governments cooperating.

UT Extension provides equal opportunities in programs and employment.

## RECOMMENDATIONS

PLOT03

Fertilizer/Lime Application Rate and Timing

Grass or Grass/Legume Hay

N / P<sub>2</sub>O<sub>5</sub> / K<sub>2</sub>O

Nitrogen/Phosphate/Potash: 30-165 / 0 / 0 pounds per acre

Limestone: 2 tons per acre

Apply recommended amounts of phosphate and potash (higher rates of P<sub>2</sub>O<sub>5</sub> and K<sub>2</sub>O for seeding) in one application anytime during the year. Apply 60 pounds of nitrogen per acre March 1-30 (30 lbs. if > 30% legumes are present). Where a second cutting is expected, apply an additional 45 pounds of N per acre immediately after the first cutting. Stockpiling fescue in the fall 60 pounds of N per acre is suggested August 15 to September 15 if moisture is available. If renovating with legumes, nitrogen should be omitted.

If urea is the nitrogen source, especially for fall topdressings, some loss of nitrogen may occur if applied to moist soils followed by three or more days of rapidly drying conditions without rainfall. If more than 4 tons of lime per acre is required, apply only 4 tons of lime per acre and re-test after one year.

County: Greene

Lab Number: 418110

### Mehlich 1 SOIL TEST RESULTS and RATINGS

Sample ID	PLOT04	(Pounds Per Acre)											
Water pH	Buffer Value	P Phosphorus	K Potassium	Ca Calcium	Mg Magnesium	Zn Zinc	Cu Copper	Fe Iron	Mn Manganese	B Boron	Na Sodium	S Sulfur	Nitrates (ppm)
6.0	7.5	63 H	147 M	3099 S	311 S								
		Organic Matter %	Soluble Salts PPM**										

## RECOMMENDATIONS

PLOT04

Fertilizer/Lime Application Rate and Timing

Grass or Grass/Legume Hay

N / P<sub>2</sub>O<sub>5</sub> / K<sub>2</sub>O

Nitrogen/Phosphate/Potash: 30-165 / 0 / 30-60 pounds per acre

Limestone: 2 tons per acre

Apply recommended amounts of phosphate and potash (higher rates of P<sub>2</sub>O<sub>5</sub> and K<sub>2</sub>O for seeding) in one application anytime during the year. Apply 60 pounds of nitrogen per acre March 1-30 (30 lbs. if > 30% legumes are present). Where a second cutting is expected, apply an additional 45 pounds of N per acre immediately after the first cutting. Stockpiling fescue in the fall 60 pounds of N per acre is suggested August 15 to September 15 if moisture is available. If renovating with legumes, nitrogen should be omitted.

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County: Greene

Lab Number: 418111

### Mehlich 1 SOIL TEST RESULTS and RATINGS

Sample ID	PLOT05	(Pounds Per Acre)											
Water pH	Buffer Value	P Phosphorus	K Potassium	Ca Calcium	Mg Magnesium	Zn Zinc	Cu Copper	Fe Iron	Mn Manganese	B Boron	Na Sodium	S Sulfur	Nitrates (ppm)
5.5	7.6	89 H	142 M	1627 S	207 S								

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### Soil Test Ratings and Results

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Organic Matter %  
Soluble Salts PPM\*\*

## RECOMMENDATIONS

PLOT05

### Fertilizer/Lime Application Rate and Timing

#### Grass or Grass/Legume Hay

N / P<sub>2</sub>O<sub>5</sub> / K<sub>2</sub>O

Nitrogen/Phosphate/Potash: 30-165 / 0 / 30-60 pounds per acre

Limestone: 2 tons per acre

Apply recommended amounts of phosphate and potash (higher rates of P<sub>2</sub>O<sub>5</sub> and K<sub>2</sub>O for seeding) in one application anytime during the year. Apply 60 pounds of nitrogen per acre March 1-30 (30 lbs. if > 30% legumes are present). Where a second cutting is expected, apply an additional 45 pounds of N per acre immediately after the first cutting. Stockpiling fescue in the fall 60 pounds of N per acre is suggested August 15 to September 15 if moisture is available. If renovating with legumes, nitrogen should be omitted.

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County: Greene

Lab Number: 418112

## Mehlich 1 SOIL TEST RESULTS and RATINGS\*

(Pounds Per Acre)

Sample ID PLOT06

Water pH	Buffer Value	P Phosphorus	K Potassium	Ca Calcium	Mg Magnesium	Zn Zinc	Cu Copper	Fe Iron	Mn Manganese	B Boron	Na Sodium	S Sulfur	Nitrates (ppm)
5.9	7.6	146 V	234 H	1925 S	275 S								
		Organic Matter %	Soluble Salts PPM**										

## RECOMMENDATIONS

PLOT06

### Fertilizer/Lime Application Rate and Timing

#### Grass or Grass/Legume Hay

N / P<sub>2</sub>O<sub>5</sub> / K<sub>2</sub>O

Nitrogen/Phosphate/Potash: 30-165 / 0 / 0 pounds per acre

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\*Ratings: Indicates relative availability of nutrients to plants. (See back of this form for detailed explanation.)

\*\*PPM = Parts per Million

If you have questions about these recommendations, contact your County Extension office.

Visit our web site at <http://soilplantandpest.utk.edu> for additional information.

## Explanation of Soil Test Report

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#### Soil Test Ratings and Pounds per Acre - Phosphorus (P) and Potassium (K)

Rating	Phosphorus (P)	Potassium (K)
LOW (L)	0 - 18	0 - 90
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#### Secondary and Micronutrients

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#### General Soluble Salt Ratings and Interpretations

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## RECOMMENDATIONS

PLOT05

### Fertilizer/Lime Application Rate and Timing

#### Grass or Grass/Legume Hay

N / P<sub>2</sub>O<sub>5</sub> / K<sub>2</sub>O

Nitrogen/Phosphate/Potash: 30-165 / 0 / 30-60 pounds per acre

Limestone: 2 tons per acre

Apply recommended amounts of phosphate and potash (higher rates of P<sub>2</sub>O<sub>5</sub> and K<sub>2</sub>O for seeding) in one application anytime during the year. Apply 60 pounds of nitrogen per acre March 1-30 (30 lbs. if > 30% legumes are present). Where a second cutting is expected, apply an additional 45 pounds of N per acre immediately after the first cutting. Stockpiling fescue in the fall 60 pounds of N per acre is suggested August 15 to September 15 if moisture is available. If renovating with legumes, nitrogen should be omitted.

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County: Greene

Lab Number: 418112

## Mehlich 1 SOIL TEST RESULTS and RATINGS\*

(Pounds Per Acre)

Sample ID	PLOT05													
Water pH	Buffer Value	P Phosphorus	K Potassium	Ca Calcium	Mg Magnesium	Zn Zinc	Cu Copper	Fe Iron	Mn Manganese	B Boron	Na Sodium	S Sulfur	Nitrates (ppm)	
5.9	7.6	146	V	234	H	1925	S	275	S					
		Organic Matter %	Soluble Salts PPM**											

## RECOMMENDATIONS

PLOT06

### Fertilizer/Lime Application Rate and Timing

#### Grass or Grass/Legume Hay

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VEGETARY 20

JUL 6 8 200

## Explanation of Soil Test Report

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## RECOMMENDATIONS

PLOT05

### Fertilizer/Lime Application Rate and Timing

Grass or Grass/Legume Hay

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County: Greene

Lab Number: 418112

## Mehlich 1 SOIL TEST RESULTS and RATINGS\*

Sample ID	PLOT06	(Pounds Per Acre)											
Water pH	Buffer Value	P Phosphorus	K Potassium	Ca Calcium	Mg Magnesium	Zn Zinc	Cu Copper	Fe Iron	Mn Manganese	B Boron	Na Sodium	S Sulfur	Nitrates (ppm)
5.9	7.6	146 V	234 H	1925 S	275 S								
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## RECOMMENDATIONS

PLOT06

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RECEIVED

JUL 6 8 2001

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**Water pH** - Actual soil pH ("Water" refers to the method of measuring pH). Most plants grow best at a slightly acidic range of 6.1 to 6.5 where nutrients are most available.

**Buffer Value** - An additional procedure we do where lime might be required. It helps to formulate a lime rate of application based on the buffering capacity of your soil.

**Nutrient Results** - See explanations above.

**Nitrogen/Phosphate/Potash** - Where fertilizer recommendations are given in *actual pounds of nutrient per acre* expressed as N, P<sub>2</sub>O<sub>5</sub> and K<sub>2</sub>O. Those crops grown in smaller areas will be provided recommendations in square footage noted in text below lime recommendation(s).

**Limestone** - If lime is recommended, water pH is too low for optimal plant growth. Crop/plant response to lime varies with both crop and variety.

*For plants with the recommended target pH range of 6.1 to 6.5: At pH 6.0 - 5.8, chances are low for a response to lime. At pH 5.6 - 5.7, chances are medium for a response to lime. At pH < 5.6, chances become high for a response to lime therefore liming is strongly encouraged to increase soil pH levels and prevent yield loss.* You may lime any time of the year, however fall applications are best. Types of lime recommended are ground agricultural limestone or pelleted lime.

**Text Notes** - Contains crucial information concerning fertilizer recommendations and specific instructions on types, rate of application and dates when applications should be applied.

Programs in agriculture and natural resources, 4-H youth development, family and consumer sciences, and resource development.

University of Tennessee Institute of Agriculture, U.S. Department of Agriculture and county governments cooperating.

UT Extension provides equal opportunities in programs and employment.

AGRICULTURAL DIAGNOSTIC LABORATORY  
UNIVERSITY OF ARKANSAS - FAYETTEVILLE

\*\*\*MANURE FOR FERTILIZER ANALYSIS (report for AGRI-429)

Name:	ROBERT E. WILSON	Received in lab:	6/24/2011
Address:	2338 CHARLIE DOTY RD.	Mailed:	7/01/2011
City:	GREENEVILLE	State, Zip:	TN 37745
County:	GREENE (TN)	CK#:	5978

Lab. No.	M10964					
Sample No.	NONE GIVEN					
Animal type	broilers					
-age/lbs	none given					
Bedding type	shavings/sawdust					
Manure type	cake					
Sample date	6/17/2011					
Age of manure	none given					
pH	8.3					
EC(umhos/cm)	11050					
% H2O	32.79					

-on dry basis-

Total %N	4.14					
Total %P	1.83					
Total %K	3.24					
Total %Ca	3.24					
Total %Carbon	37.88					
NO3-N, mg/kg						
NH4-N, mg/kg						

-on as-is basis-

Total %N	2.78					
Total %P	1.23					
Total %K	2.18					
Total %Ca	2.18					
Total %Carbon	25.46					
NO3-N, mg/kg						
NH4-N, mg/kg						

-lbs/ton on as-is basis-

N	55.6					
P2O5	56.3					
K2O	52.8					
Ca	43.6					
Total Carbon	509.2					
NO3-N						
NH4-N						

\*\*\*all analyses performed on "as-is" basis/ "dry" basis is calculated from moisture content

\*lbs/ton P2O5 = %Total P on "as-is" basis multiplied by 20\*2.29

\*lbs/ton K2O = %Total K on "as-is" basis multiplied by 20\*1.2

JUL 26 2011  
JUL 26 2011

AGRICULTURAL DIAGNOSTIC LABORATORY  
UNIVERSITY OF ARKANSAS - FAYETTEVILLE

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FAYETTEVILLE, TN  
JUL 24 2011

AGRICULTURAL DIAGNOSTIC LABORATORY  
UNIVERSITY OF ARKANSAS - FAYETTEVILLE

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